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ABSTRACT

Classroom assessment events were studied by investigating students' perceptions of task, self-efficacy, effort, and goal orientations and achievement levels in third-grade language arts and fifth-grade mathematics and social studies. Whether student descriptions differ from one assessment event to the next was also studied. Subjects were students from two third-grade classes and two fifth-grade classes, each with from 13 to 28 students (median 20 students). Observation and survey responses were used to gather data about student perceptions. Findings provide evidence that classroom assessments do differ based on their context, the teachers, the students, the subjects, and the grade levels at which they are used. This theory represents an integration of the concept of the classroom assessment environment with concepts from cognitive psychology explored at the event level. Evidence from this study and preceding investigations suggests that events differ, so that it will be important to develop a large enough catalog of event descriptions to be able to see reliable patterns. (Contains 6 tables and 12 references.) (SLD)

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CLASSROOM ASSESSMENT, STUDENT MOTIVATION, AND ACHIEVEMENT IN ELEMENTARY AND MIDDLE SCHOOL

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CLASSROOM ASSESSMENT, STUDENT MOTIVATION, AND ACHIEVEMENT IN ELEMENTARY AND MIDDLE SCHOOL

The classroom assessment environment (Stiggins & Conklin, 1992) is an important part of the classroom atmosphere. The way teachers communicate their expectations to students and the way they provide feedback as to how well these expectations were met helps students form concepts of what is important to learn and how good they are at learning. Students are given specific expectations for particular assessments each time a particular assessment task is assigned, and they experience the degree to which they meet those expectations and the related feedback; these instructional segments can be called Classroom Assessment Events (Brookhart, 1997). A classroom assessment event may be considered a special case of an activity segment--a lesson or part of a lesson that has a focus, a beginning and an end, participants, materials, and goals (Stodolsky, 1988)--where students realize that the degree to which their performance achieves the goal will be judged by the teacher. There are many, many of these classroom assessment events in typical classrooms, interlocked and intertwined together. The overall sense of expectations that these build up, the meaning or sense that students make out of this aspect of their classroom, comprises the classroom assessment environment. The way in which activities are presented in the classroom itself affects student achievement (Gipps, 1994). Figure 1 (attached) shows a simplified model of just one classroom assessment event.

In addition to the obvious and rather objective characteristics of assessment tasks, like whether a test has multiple choice or essay questions, student perceptions of the task influence the amount of effort students will invest (Salomon, 1983, 1984). The perceived importance, usefulness, and value of engaging in a task are motivators for student effort (Pintrich & Schrauben, 1992). Students will differ in their perceived self-efficacy to accomplish the task as they perceive it (Pintrich & Schrauben, 1992; Schunk, 1994; Weiner, 1979). Self-efficacy is associated with effort, persistence, and performance. Students make judgments about their own self-efficacy by comparing their past accomplishments with standards, either relative or absolute (Lepper, 1988; Schunk, 1994). To make these judgments, students must weigh task characteristics like difficulty, amount of effort required, and amount of assistance available against their perceptions of their past performances and accomplishments.

In a previous study in this series (Brookhart & DeVoge, 1999), when students explained the reasons for their efforts they often described their goal orientations. A mastery orientation refers to the perceived importance and value students place on the task itself, while an ego orientation refers to placing value on others' approval of one's performance (Ames & Archer, 1988). Therefore, goal orientations were included as variables in this study to help understand effort. Classroom achievement is defined as accomplishing the instructional objectives intended in the teacher's plans. This achievement is conventionally measured with classroom assessments that teachers construct or select for this purpose. These assessments also comprise the "task" that the students are perceiving, about which they judge their self-efficacy, and on which they expend their effort. All these are components of the classroom assessment event.

The purpose of this study was to continue to build a description of classroom assessment events according to this theoretical framework. A previous study documented eight Language Arts classroom assessment events, four each in two third grade classrooms (Brookhart & DeVoge, 1999). This study was conducted in third grade in the same elementary school (also in Language Arts classes, with one of the same teachers and one teacher new to the study) and in fifth grade in the adjoining middle school (in math and social studies classes), to expand the description of classroom assessment events to another grade level and additional subject areas. The research questions were:

(1) For a variety of classroom assessment events, what are student perceptions of task, self-efficacy, effort, and goal orientations, and what are achievement levels, in third grade Language Arts and fifth grade Math and Social Studies classes?

(2) Do these descriptions differ from one assessment event to the next? Are patterns related to subject, level (third grade, fifth grade), or type of assessment?

These research questions were stated descriptively for three reasons. First, the theory is relatively young, and descriptive work has not been done. Second, because participation in the study was voluntary, all the teachers were good and all their assessments were relatively positive, pleasant, and productive, which precluded testing hypotheses requiring large classroom climate differences. Third, within any one class and event, sample sizes were small.

Method

Sample. Two third grade teachers, including one who had participated in a similar study the previous year, and two fifth grade teachers volunteered to be part of the study. The classes were in adjoining elementary and middle schools, in a small urban district with an enrollment of approximately 2,300 students. Sixty-two percent of students in the elementary school, and fifty-five percent of students in the middle school, were classified as low-income students. Permission to conduct the study was obtained from the district superintendent and the middle school and elementary school principals. Informed consent letters were sent to parents. The number of students in the classes participating in this study ranged from 13 to 28 (median 20) and included approximately equal numbers of boys and girls in each. The percentage of minority students in each class ranged from 15% to 46% (median 27%).

Procedure. Initial observations were made in each class to note general instructional practices and classroom routines and to familiarize the researchers, students, and teachers with each other; this was important because of the focus on classroom environment. After the initial observation, the researcher and teachers together decided on which classroom assessment events would be observed for the study, with the intention of including a range of different types of assessments. Four Language Arts classroom assessments in each of the two third grade classes were selected for observation. Two each of math and social studies assessments in each of the fifth grade classes were selected. Math and social studies were two subjects that each of the participating fifth grade teachers taught. One teacher furnished survey data for one additional social studies classroom assessment, although a researcher visit and student interviews were not possible for that assessment, making a total of 5 observations for her classes (2 math and 3 social studies). A somewhat different group of students were in the math and social studies classes, since social studies was taught by home room and math was tracked. Thus this study includes data from 17 different classroom assessment events, for four different teachers, two grade levels, and three subjects.

Data Sources. Survey instruments were administered before and after each of the 17 classroom assessments observed. Alpha (internal consistency reliability) was calculated for each scale. The presurveys included scales measuring Perceived Task Characteristics (median alpha = .66) and Perceived Self-Efficacy (median alpha = .79). The postsurveys included scales measuring Amount of Invested Mental Effort (median alpha = .61), Mastery Goal Orientation (median alpha = .84), and Ego Goal Orientation (median alpha = .69). Information on the construction, theoretical base and content validity, and empirical evidence for validity for these scales is presented in Brookhart and DeVoge (1999). For 16 of the 17 classroom assessment events, the teacher selected 4 students for the researchers to interview. Students with a variety of achievement levels were selected for each event. The interview questions were designed to elicit information about the same concepts as the surveys, but the interview format allowed the researchers to ask the students the reasons for their responses. Interviews were coded into the same categories as the survey scales; coder agreement was 87%.

Results

Question 1: What are student perceptions of task, self-efficacy, effort, and goal orientations, and what are achievement levels, in third grade Language Arts and fifth grade Math and Social Studies classes?

Tables 1 through 4 present profiles of the various assessment events for each class. Scale means are averages, for each particular scale for each respective classroom assessment event, on a scale of 1 through 5, where higher numbers indicate "more" of the construct named by the scale. Standard deviations are measures of how dispersed or spread out the scores are. Smaller standard deviations indicate student responses are more bunched together, and larger standard deviations indicate student responses are more spread out, on the respective scales.

Table 1. Profiles of Assessment Events in Third Grade, Class #1

Classroom Assessment Event	Scale means (standard deviations)
Pecos Bill adventure paragraph (writing performance assessment)	Perceived Task Characteristics 3.29 (.91) Perceived Self-efficacy 3.23 (.96) Amount of Invested Mental Effort 4.58 (.57) Mastery Goal Orientation 3.00 (1.03) Ego Goal Orientation 4.21 (.92) Achievement (4-point rubric) 3.08 (.49)
Meaningful sentence test (write 5 meaningful sentences for vocabulary words)	Perceived Task Characteristics 3.44 (.80) Perceived Self-efficacy 3.67 (1.12) Amount of Invested Mental Effort 4.42 (.73) Mastery Goal Orientation 3.04 (1.31) Ego Goal Orientation 3.95 (1.00) Achievement (percent) 94.00 (6.76)
Story test -- "Rachel's Journal" -- comprehension test on story from reader	Perceived Task Characteristics 2.98 (.87) Perceived Self-efficacy 3.38 (1.00) Amount of Invested Mental Effort 4.35 (.69) Mastery Goal Orientation 2.83 (1.25) Ego Goal Orientation 3.67 (1.23) Achievement (percent) 77.00 (10.82)
Language test -- correcting incorrect sentences	Perceived Task Characteristics 3.21 (.93) Perceived Self-efficacy 3.53 (.77) Amount of Invested Mental Effort 4.45 (.62) Mastery Goal Orientation 2.98 (1.01) Ego Goal Orientation 3.89 (1.00) Achievement (percent) 89.92 (4.76)

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Table 2. Profiles of Assessment Events in Third Grade, Class #2

Classroom Assessment Event	Scale means (standard deviations)
Pecos Bill adventure paragraph (writing performance assessment)	Perceived Task Characteristics 4.19 (.62) Perceived Self-efficacy 3.35 (.95) Amount of Invested Mental Effort 4.44 (.57) Mastery Goal Orientation 3.86 (.87) Ego Goal Orientation 3.71 (.86) Achievement (percent) 84.31 (10.03)
Story test -- "Eliza's Daddy" -- comprehension test on story from reader	Perceived Task Characteristics 3.77 (.87) Perceived Self-efficacy 3.29 (.76) Amount of Invested Mental Effort 4.75 (.38) Mastery Goal Orientation 3.46 (.84) Ego Goal Orientation 3.83 (.88) Achievement (percent) 91.79 (7.29)
Spelling test -- unit test on St. Patrick's day answer sheet to color	Perceived Task Characteristics 4.14 (.95) Perceived Self-efficacy 3.92 (.85) Amount of Invested Mental Effort 4.25 (.91) Mastery Goal Orientation 3.56 (1.08) Ego Goal Orientation 3.50 (.97) Achievement (percent) 92.81 (7.95)
Story test -- "Legend of Bluebonnet" -- comprehension test on story from reader	Perceived Task Characteristics 3.79 (1.01) Perceived Self-efficacy 3.61 (.93) Amount of Invested Mental Effort 4.25 (.60) Mastery Goal Orientation 2.78 (.89) Ego Goal Orientation 3.96 (.83) Achievement (percent) 82.88 (10.41)

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Table 3. Profiles of Assessment Events in Fifth Grade, Class #1

Classroom Assessment Event -- Social Studies	Scale means (standard deviations)
Middle Colonies test	Perceived Task Characteristics 3.87 (.58) Perceived Self-efficacy 3.69 (.59) Amount of Invested Mental Effort 4.64 (.47) Mastery Goal Orientation 3.46 (.93) Ego Goal Orientation 3.57 (.94) Achievement (percent) 88.93 (10.96)
Role play, "We protest!"	Perceived Task Characteristics 3.76 (.81) Perceived Self-efficacy 3.24 (.97) Amount of Invested Mental Effort 4.41 (.72) Mastery Goal Orientation 3.94 (.97) Ego Goal Orientation 3.88 (1.10) Achievement (4-point rubric) 3.71 (.50)
Pre-revolutionary & French/Indian War test	Perceived Task Characteristics 4.00 (.59) Perceived Self-efficacy 3.65 (.86) Amount of Invested Mental Effort 4.74 (.49) Mastery Goal Orientation 3.54 (.96) Ego Goal Orientation 3.32 (1.08) Achievement (percent) 84.82 (14.98)

Classroom Assessment Event -- Math	Scale means (standard deviations)
Geometry cartoon ("PSSA-like" performance)	Perceived Task Characteristics 3.52 (.66) Perceived Self-efficacy 3.25 (.81) Amount of Invested Mental Effort 4.04 (.62) Mastery Goal Orientation 3.26 (.85) Ego Goal Orientation 3.17 (.96) Achievement (5-point rubric) 4.88 (.60)
Unit test on 1-digit division, finding averages, solving equations	Perceived Task Characteristics 3.30 (.74) Perceived Self-efficacy 3.48 (.75) Amount of Invested Mental Effort 4.34 (.73) Mastery Goal Orientation 2.97 (.61) Ego Goal Orientation 3.08 (1.07) Achievement (percent) 81.96 (13.02)

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Table 4. Profiles of Assessment Events in Fifth Grade, Class #2

Classroom Assessment Event -- Social Studies	Scale means (standard deviations)
Middle Colonies test	Perceived Task Characteristics 3.90 (.94) Perceived Self-efficacy 3.73 (.65) Amount of Invested Mental Effort 4.31 (.75) Mastery Goal Orientation 3.21 (1.12) Ego Goal Orientation 3.26 (.91) Achievement (percent) 75.95 (18.93)
Pre-revolutionary & French/Indian War test	Perceived Task Characteristics 3.64 (.92) Perceived Self-efficacy 3.33 (.86) Amount of Invested Mental Effort 4.55 (.55) Mastery Goal Orientation 3.69 (.79) Ego Goal Orientation 3.59 (.63) Achievement (percent) 71.52 (16.46)

Classroom Assessment Event -- Math	Scale means (standard deviations)
Unit test on 1-digit division, finding averages, solving equations	Perceived Task Characteristics 4.37 (.37) Perceived Self-efficacy 3.37 (.73) Amount of Invested Mental Effort 4.67 (.49) Mastery Goal Orientation 3.68 (.68) Ego Goal Orientation 3.65 (.80) Achievement (percent) 58.89 (22.13)
Unit test on fractions and mixed numbers	Perceived Task Characteristics 4.11 (1.19) Perceived Self-efficacy 3.30 (.93) Amount of Invested Mental Effort 4.44 (.54) Mastery Goal Orientation 3.74 (1.00) Ego Goal Orientation 3.48 (1.24) Achievement (percent) 67.11 (18.58)

Additional information about perceptions of assessment tasks, self-efficacy, and study effort were available in the student interviews. These generalizations are presented below with examples of supporting quotations.

• Regarding perceptions of the task, students articulated the usefulness of their learning in terms of "later in life," sometimes in further grades and sometimes in adulthood. But these perceptions were sometimes generic and were not necessarily realistic. Some of the language used suggested that students were repeating points adults had made to them about the usefulness of learning for "later in life."

> Because if you don't know how to write and if you had a job and you didn't know how to spell you might get fired. (3rd grade, female)

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> And if we want to pass through the 4th grade we have to keep learning. (3rd grade, female)
>
> For whenever you grow up. (3rd grade, male)
>
> So you don't get an F. So you don't get yelled at or grounded. (5th grade, male)
>
> So when you get older you can know how to do it. Like if you get a job at the one grocery store you can use a cash register and know how much money to give a person back. (5th grade, female)

• Also regarding perceptions of the task, students often made comments that indicated they felt the teacher owned the material. These comments were often expressed in language that also indicated their understanding that the teacher was the one who gave directions and made assignments, which of course accurately reflected the situation. It is not possible to tell from the data, but it is tempting to wonder, whether the fact that teachers do tell students what to do influences the fact that most students do not see the material that they learn as belonging to them, even by the time they get to high school (Brookhart & Durkin, 1999).

> She wanted us to study for it and she wanted us to pay attention to the directions at the top of the page. (3rd grade, male)
>
> She like makes us do these study guides before the test. Sort of like the same test except different problems. (5th grade, female)
>
> To learn the difference between the Puritans and the Quakers. Because she really narrowed it down. (5th grade, female)
>
> [Compare these with this student who expressed his ownership of the material:] I do like the problems out of the book that we have to do. I just study them. I look over my work and make sure it's right and that I know what I'm doing. (5th grad, male)

• Regarding perceptions of self-efficacy to do the task and reports of active learning strategies, students in both third and fifth grade reported confidence because they studied at home with (usually) Mom, sometimes other family members. Third graders also reported a reliance on Mom for judgments about the worth, utility, and value of schoolwork, and sometimes even reported that Mom "made" them study.

> Because when she asks you a question and you didn't answer the questions the night before, you would get it wrong. (3rd grade, male)
>
> My Mom tells me to practice writing paragraphs and stories. (3rd grade, female)
>
> I studied by my Mom asking me words and I tried to spell them. (3rd grade, female)
>
> My Mom tells me school is important. (3rd grade, female)

• Students reported liking work that was easy for them to do. This is not to say they liked simple work. Rather, they liked doing serious work that they had learned and were thus able to handle. They disliked trying to do work that they knew they could not do well.

> I like to learn very much about stories -- what they mean, the main ideas, main characters, other characters, the plot and the solution, what the author is and what the story's about...It looks like an easy job because the story -- because tall tales are good stories. (3rd grade, male)

I like the averages. Because they're easier and I did them ever since I got here because in our spelling we have to find out our averages and percentages and so it's about the easiest thing in math to do right now. (5th grade, male)

Relatively easy. I say it because I paid attention in class, she explained it to us. We've been on this for like more than three weeks, and I understood it, so I had no problems on the test. (5th grade, female)

Question 2: Do student perceptions and achievement differ from one assessment event to the next? Are patterns related to level (third grade, fifth grade) or type of assessment?

Table 5 below uses the assessment profile information in Tables 1 through 4 and presents a comparison of rankings for each of the events on each variable. Patterns in the profiles of means did not seem to vary by subject or grade level. There were some differences by class. Observations from the rankings in Table 5 include the following:

- The rankings indicated no particular order by subject or grade level. Third and fifth grade classroom assessment events and classroom assessment events in different subjects were intermixed in the rank order for each of the variables of interest.

- Class #1 in third grade ranked relatively lower than the other classes in Perceived Task Characteristics and Mastery Goal Orientations and relatively higher than the other classes in Ego/Social Goal Orientations.

- For three of the four assessments that were observed in more than one class, their rank ordering for the variables of interest was quite different from one class to the next. These three were: the third grade Pecos Bill Adventure paragraph in Language Arts; the fifth grade test on division and averages in Math; and the fifth grade test on pre-revolutionary events, including the French and Indian War, in Social Studies. For one classroom assessment event, the test on the Middle Colonies in fifth grade Social Studies, rank ordering of means was very similar. This may be evidence that different assessments are different in the context of different classes, although it is important to remember that in addition to differences in instruction, presentation, and aspects of the classroom assessment environment, the students were different from class to class, too.

- Reported Amount of Invested Mental Effort (how hard students reported trying and concentrating on their work) was high for all assessments.

Table 5. Rank (Mean) of Study Variables for Each Classroom Assessment Event

Grade, Class, Event	Subject, Type of Assessment	Perc. Task Charact.	Perc. Self-efficacy	Amt of Invested Mental Effort	Mastery Goal Orient.	Ego/Soc. Goal Orient.
5th, Class #2 Division & averages	Math Test	1 (4.37)	10 (3.37)	3 (4.67)	5 (3.68)	9 (3.65)
3rd, Class #2 Pecos Bill ¶	Language Arts Performance	2 (4.19)	11 (3.35)	8.5 (4.44)	2 (3.86)	7 (3.71)
3rd, Class #2 Spelling test	Language Arts Test	3 (4.14)	1 (3.92)	15.5 (4.25)	6 (3.56)	12 (3.50)
5th, Class #2 Fractions, mixed #s	Math Test	4 (4.11)	13 (3.30)	8.5 (4.44)	3 (3.74)	13 (3.48)
5th, Class #1 Pre-Rev. test	Social Studies Test	5 (4.00)	5 (3.65)	2 (4.74)	7 (3.54)	14 (3.32)
5th, Class #2 Middle colonies	Social Studies Test	6 (3.90)	2 (3.73)	14 (4.31)	11 (3.21)	15 (3.26)
5th, Class #1 Middle colonies	Social Studies Test	7 (3.87)	3 (3.69)	4 (4.64)	9 (3.46)	11 (3.57)
3rd, Class #2 *Leg. of Bluebonnet*	Language Arts Test	8 (3.79)	6 (3.61)	15.5 (4.25)	17 (2.78)	2 (3.96)
3rd, Class #2 *Eliza's Daddy*	Language Arts Test	9 (3.77)	14 (3.29)	1 (4.74)	8 (3.46)	6 (3.83)
5th, Class #1 Role play -- Protest	Social Studies Performance	10 (3.76)	16 (3.24)	11 (4.41)	1 (3.94)	5 (3.88)
5th, Class #2 Pre-Rev. test	Social Studies Test	11 (3.64)	12 (3.33)	6 (4.55)	4 (3.69)	10 (3.59)
5th, Class #1 Geometry cartoon	Math Performance	12 (3.52)	15 (3.25)	17 (4.04)	10 (3.26)	16 (3.17)
3rd, Class #1 Meaningful sentence	Language Arts Test	13 (3.44)	4 (3.67)	10 (4.42)	12 (3.04)	3 (3.95)
5th, Class #1 Division & averages	Math Test	14 (3.30)	8 (3.48)	13 (4.34)	15 (2.97)	17 (3.08)
3rd, Class #1 Pecos Bill ¶	Language Arts Performance	15 (3.29)	17 (3.23)	5 (4.58)	13 (3.00)	1 (4.21)
3rd, Class #1 Correcting sentences	Language Arts Test	16 (3.21)	7 (3.53)	7 (4.46)	14 (2.98)	4 (3.89)
3rd, Class #1 *Rachel's Journal*	Language Arts Test	17 (2.98)	9 (3.38)	12 (4.35)	16 (2.83)	8 (3.67)

Table 6.

Correlations among Study Variables for Each Classroom Assessment Event

Event	Subject	Teacher	Format	PSE-PTC	AIME-PTC	AIME-PSE	MGO-PTC	MGO-PSE	MGO-AIME	EGO-PTC	EGO-PSE	EGO-AIME	EGO-MGO	ACH-PTC	ACH-PSE	ACH-AIME	ACH-MGO	ACH-EGO
3rd Grade																		
Measuring Stars	Lang Arts	Class 01	Test	0.47	0.83	0.56	0.71	0.61	0.61	0.83	0.40	0.72	0.64	-0.22	0.03	0.03	0.13	0.21
Teacher's Assmt	Lang Arts	Class 01	Test	0.84	0.50	0.38	0.82	0.69	0.56	0.69	0.62	0.77	0.67	-0.58	0.48	0.22	0.38	0.46
Lang Test	Lang Arts	Class 01	Test	0.42	0.63	0.11	0.87	0.42	0.70	0.58	0.14	0.82	0.61	0.07	0.50	0.31	0.08	0.07
Percnts/Bal Par	Lang Arts	Class 01	Performance	0.52	0.23	0.50	0.63	0.72	0.48	0.43	0.42	0.49	0.54	-0.33	0.51	0.47	0.45	0.53
Eliza's Daddy	Lang Arts	Class 02	Test	0.36	0.00	0.22	0.73	0.38	0.15	0.13	0.20	0.29	0.17	0.08	0.12	0.21	0.51	0.24
Spelling Test	Lang Arts	Class 02	Test	0.29	0.39	0.00	0.70	0.17	0.58	0.02	0.51	0.08	0.33	0.07	0.45	0.10	0.07	0.28
Bluebonnet	Lang Arts	Class 02	Test	0.25	0.07	0.22	0.90	0.18	0.15	0.15	0.87	0.56	0.21	0.37	0.06	0.67	0.12	0.56
Percnts/Bal Par	Lang Arts	Class 02	Performance	0.45	0.04	0.02	0.69	0.75	0.06	0.06	0.55	0.17	0.51	0.16	0.07	0.23	0.20	0.07
5th Grade																		
Mad Cakrwks	Soc Studies	Class 01	Test	0.48	0.24	0.07	0.36	0.31	0.39	0.30	0.19	0.06	0.01	0.17	0.22	0.50	0.21	0.20
Pre Rev Test	Soc Studies	Class 01	Test	0.35	0.44	0.24	0.78	0.03	0.21	0.25	0.11	0.47	0.11	0.27	0.47	0.34	0.01	0.23
Rule Play	Soc Studies	Class 01	Test	0.55	0.18	0.18	0.38	0.06	0.02	0.26	0.01	0.01	0.13	0.17	0.22	0.20	0.02	0.03
Mad Cakrwks	Soc Studies	Class 02	Test	0.10	0.54	0.55	0.91	0.05	0.56	0.55	0.01	0.51	0.59	0.10	0.27	0.16	0.24	0.13
Pre Rev Test	Soc Studies	Class 02	Test	0.51	0.01	0.27	0.19	0.48	0.12	0.31	0.28	0.13	0.31	0.57	0.31	0.18	0.39	0.02
Div & Avg	Math	Class 01	Test	0.19	0.26	0.46	0.65	0.06	0.09	0.03	0.02	0.14	0.12	0.17	0.64	0.17	0.01	0.03
Gacon Cartoon	Math	Class 01	Test	0.58	0.00	0.25	0.50	0.24	0.09	0.29	0.29	0.14	0.27	0.16	0.19	0.16	0.18	0.11
Div & Avg	Math	Class 02	Test	0.64	0.23	0.52	0.08	0.28	0.39	0.26	0.20	0.31	0.20	0.11	0.21	0.04	0.27	0.10
Fractions	Math	Class 02	Performance	0.72	0.18	0.47	0.87	0.77	0.44	0.34	0.57	0.55	0.40	0.21	0.32	0.24	0.33	0.17

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Table 6 above presents correlations among the various scales, for each classroom assessment event. These correlations are measures of relationship between two variables that can range from -1.00 to 1.00. The absolute value of the number indicates strength of relationship (the closer to zero, the weaker the relationship; the closer to 1, the stronger the relationship). The sign (positive or negative) indicates the direction of the relationship. Positive relationships obtain when higher scores on one variable are associated with higher scores on the other variable, and conversely lower scores on one variable are associated with lower scores on the other variable. Negative relationships obtain when higher scores on one variable are associated with lower scores on the other variable, and conversely lower scores on one variable are associated with higher scores on the other variable. Observing relationships among variables gives additional information beyond what can be observed from each variable separately.

Observations about patterns in the correlations did suggest some differences by grade level. This is in contrast to the profiles of means; considering the variables one at a time led to the observation that there were no obvious differences by grade level. Correlations measure the relationships between pairs of variables, and in these relationships there did seem to be some differences by grade level. There were also some patterns by class. Two relationships were consistently positive (with only one exception out of 17), between Perceived Task Characteristics and Perceived Self-efficacy and between Perceived Task Characteristics and Mastery Goal Orientation. Other observed patterns included the following.

- The relationship between Amount of Invested Mental Effort and Perceived Task Characteristics was positive for third grade Class #1 but mixed for the other classes. In Class #1, the more students reported concentrating the more they tended to report that the task was interesting and important.

- The relationship between Amount of Invested Mental Effort and Perceived Self-efficacy was positive for third grade Class #1 and for 5th grade math classes, mixed for the others. In third grade Class #1 and 5th grade math classes, the more students reported concentrating the more they tended to report that they could do the job.

- The relationship between Mastery Goal Orientations and Amount of Invested Mental Effort were positive for third grade Class #1 and for fifth grade Class #2. For those two classes, the more students reported learning for its own sake, the more they reported concentrating and trying hard.

- The relationship between Ego/Social Goal Orientations and Perceived Task Characteristics were high and positive for third grade Class #1, essentially zero for third grade Class #2, and mostly positive but moderately low for both fifth grade classes. For the first class, the more students reported that they were learning for approval or other external reasons, the more they tended to report that the task was interesting and important.

- The relationship between Ego/Social Goal Orientations and Perceived Self-efficacy was positive for third grade and essentially zero for fifth grade. For third grade, the more students reported that they were learning for approval or other external reasons, the more they tended to report that they could do the job.

- The relationship between Ego/Social Goal Orientations and Mastery Goal Orientations was positive for third grade Class #1, mixed otherwise. For the first class, the more students reported that they were learning for approval or other external reasons, the more they also tended to report that they were learning for its own sake.

- The relationship between Achievement and Perceived Self-efficacy, while mixed, was stronger for fifth grade than for third grade. For fifth grade, there was a slight tendency for the students who reported that they felt they could do the job to, in fact, receive a higher grade for the work.

Conclusion

There was evidence that classroom assessments do differ depending on their context, on the teachers, students, subjects, and grade levels in which they are used. This theory represents an important integration of the concept of the Classroom Assessment Environment with concepts from cognitive psychology, explored at the Event level, which is a closely grained enough examination to identify nuances and variations sometimes lost in more generic studies (Stodolsky, 1988). This study continues a research agenda that seeks to describe classroom assessment events across various environments, grade levels, and subjects. Evidence continues to suggest that events differ, and so it will be important to develop a large enough catalog of event descriptions to be able to see reliable patterns.

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